

PHENIX WEEKLY PLANNING



Aug. 1, 2013
Don Lynch

This Week

- Continue VTX Repairs/Upgrade
- Continue building VTX strip-pixel staves
- MPC-Ex installation prep
- DC East repairs prep
- Summer Sunday Prep
- Continue sPHENIX support
 - HCal prototype
 - EMCal prototype design continuing
- Future IR evolution modeling



Next Week

- Summer Sunday Disassembly
- Start MuTr Station 1 S, Stations 2 & 3 N & S troubleshooting & repairs
- Continue VTX Repairs/Upgrade
- Continue building VTX strip-pixel staves
- MPC-Ex installation prep
- Start DC West repairs
- Begin assembling DC Dust Cover Support Structure "DCDCSS"
- Continue sPHENIX support
 - HCal prototype
 - EMCal prototype design continuing
- Future IR evolution modeling

VTX/FVTX repairs/upgrades

Waiting for cores



8/1/2013

VTX & FVTX Summary of Tasks

VTX/FVTX Disassembly - After Start of shutdown tasks are completed (EC out to AH), coolant and N₂ lines, LV, signal and HV cables and fibers will be carefully removed and coolant drained. East and west detector halves will then be de-mounted and transported to Chemistry bldg for maintenance and overhaul. - Done

At Chemistry lab - VTX, bigwheels and FVTX will be disassembled and all 4 FVTX stations will be transported to the FVTX PHYSICS Lab. - Done

At PHYSICS FVTX lab -FVTX stations will be tested, faults will be isolated, repaired and re-tested.

Concurrently at Chemistry lab -VTX will be disassembled into individual barrels and bigwheels, new /reworked pixel staves will be installed, improved strip-pixel staves will be fabricated assembled and integrated with active components harvested from staves to be replaced, tested and reinstalled in their respective barrels. The VTX will then be re-assembled tested and re-surveyed.

FVTX transported to Chemistry building. FVTX Integrated into VTX. VTX/FVTX assembly surveyed

VTX&FVTX assembly transported to PHENIX and installed on rails.

Coolant and N₂ lines, LV, signal and HV cables and fibers will be carefully reattached.

Full detector re-surveyed in IR

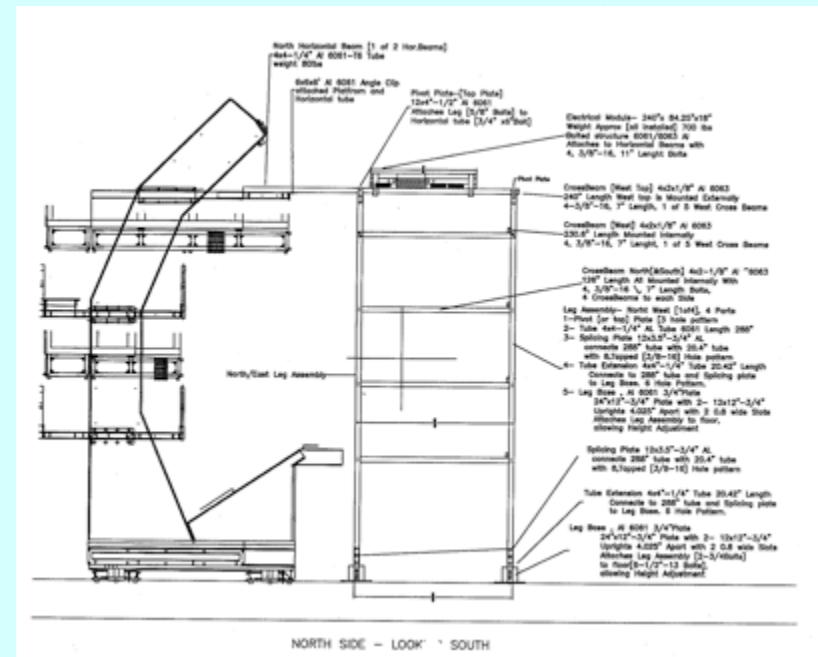
DC East & West Repairs/Upgrade



Getting ready for DC West & DC East

Hutter Tent structure located in boneyard.

Assembly of Hutter tent structure described in detail in WP 2004-08.

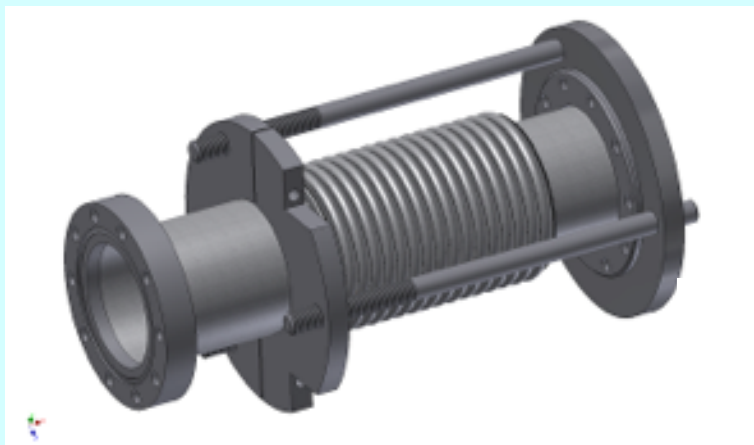


DC East Repairs Summary of Tasks

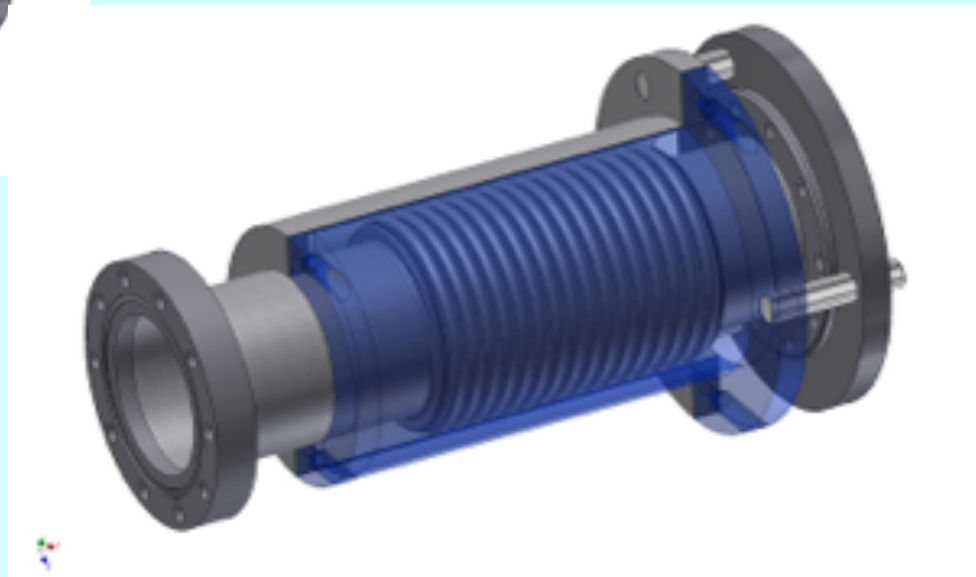
- East Carriage move to AH - Done
- Work Permit - Done
- Design & Construct tent (similar to tent constructed for DC West last year) to prevent foreign material from entering DC East cavity while window is removed.
- CAD to provide 2 vertical manlifts to allow DC experts to remove and replace window
- Get supplies and materials from Stony Brook for window replacement
- Troubleshooting and repairs on DC West
- Supply Gas, DAQ and Electric to EC East
- Isolate and repair leak on DC East
- Remove and replace window
- Isolate and repair leak under electronics card
- Leak test
- Operational tests
- Remove tent and manlift

MPC-Ex Initial (Partial) Installation

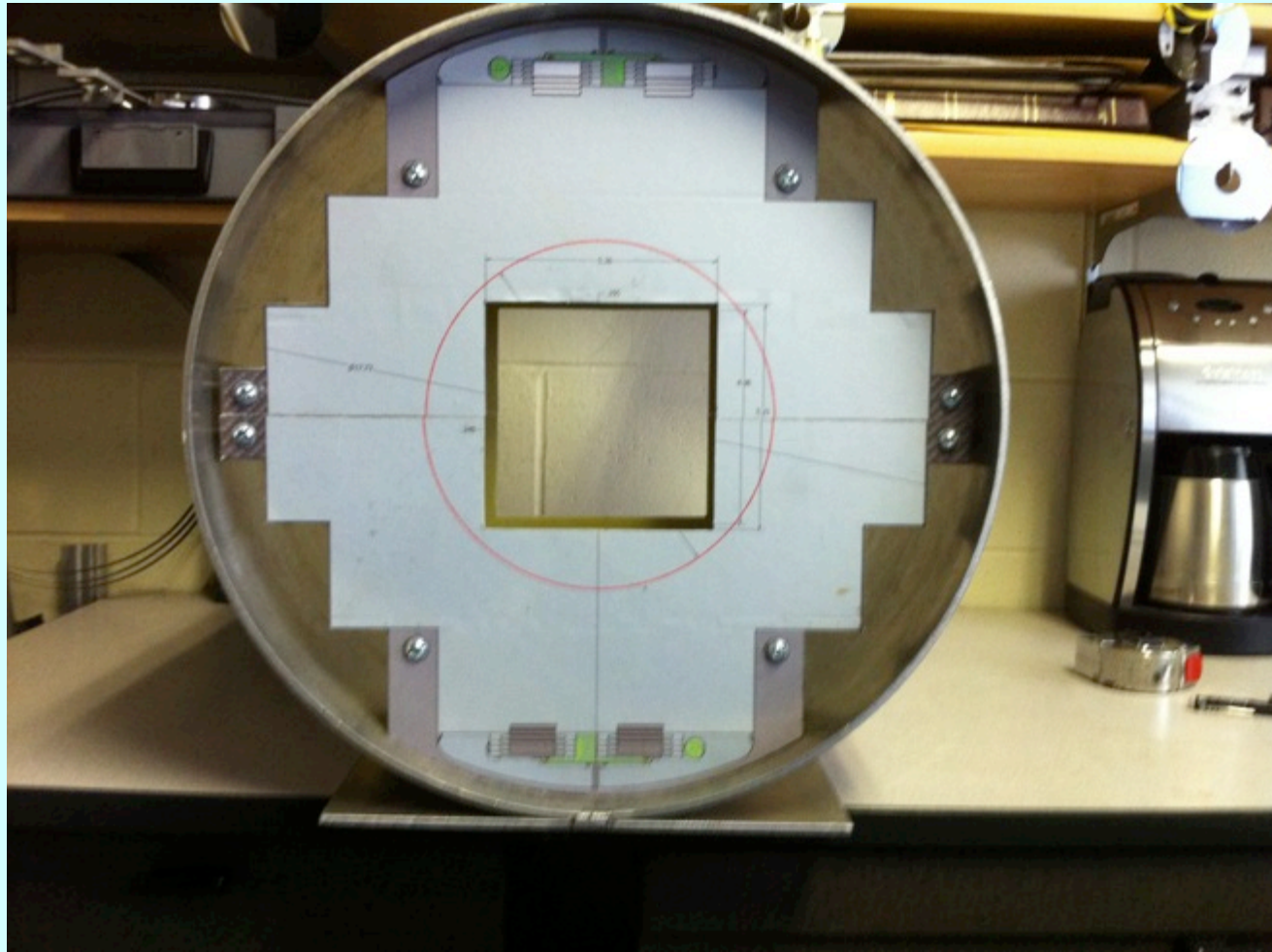
TECHNICAL SUPPORT TEAM



Existing vacuum bellows anti-squirm In MPC S Cavity

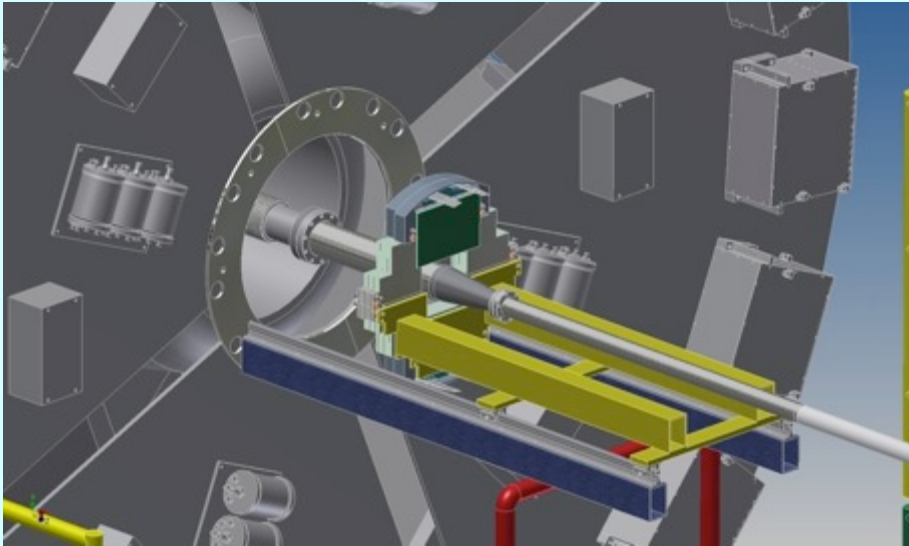


Design vacuum bellows anti-squirm in MPC S Cavity to accommodate MPC-Ex. Parts now at CS for fabrication



MPC-Ex mockup to be used for cable and utilities routing plans

PHENIX - SDAOFT - NO-3



8/1/2013

MPC-Ex Initial/Partial Installation Summary of Tasks

TECHNICAL SUPPORT WORK

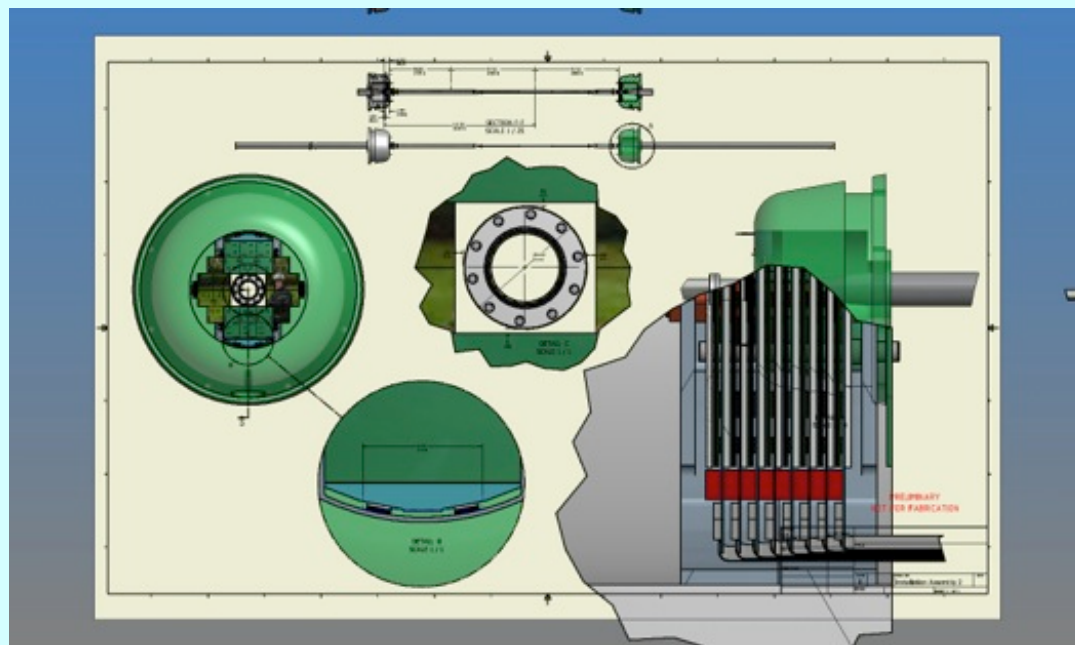
Determine extent of installation for 2013 - Done:
For Run-14 the goal will be to install four mechanically complete layers of the MPC-EX, both top and bottom halves (8 tungsten plates) in the south muon magnet piston. Four layers will have carrier boards, and those carrier boards will be partially populated so that we have partial coverage in azimuth with full coverage in depth. *Installation Schedule 11/1-11/15*

Design assembly, support and installation fixtures

Assemble and bench test

Install

Performance tests



8/1/2013

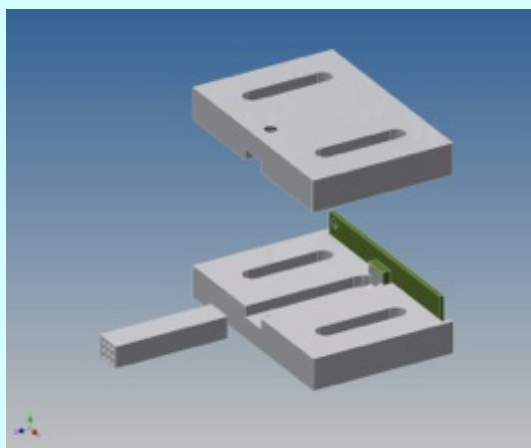
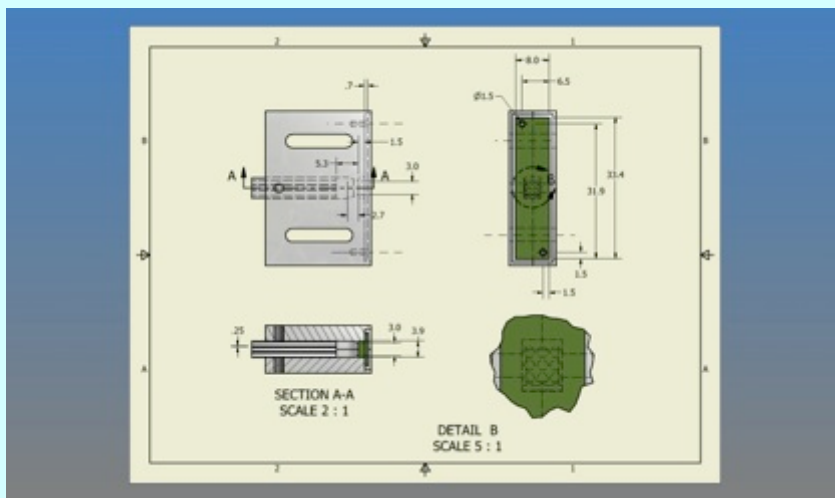
mRPC Test Lab Project



mRPC Test Lab Support
as required



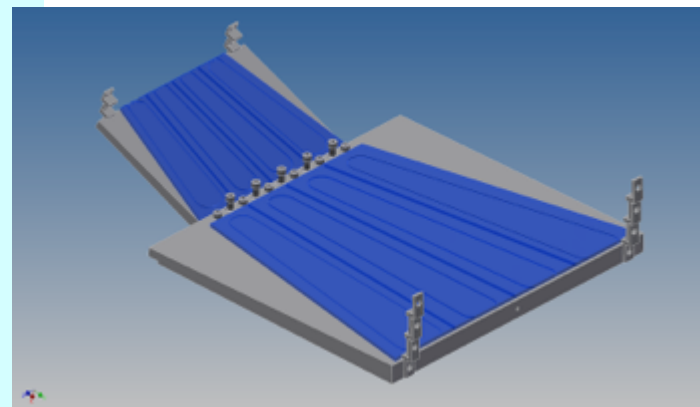
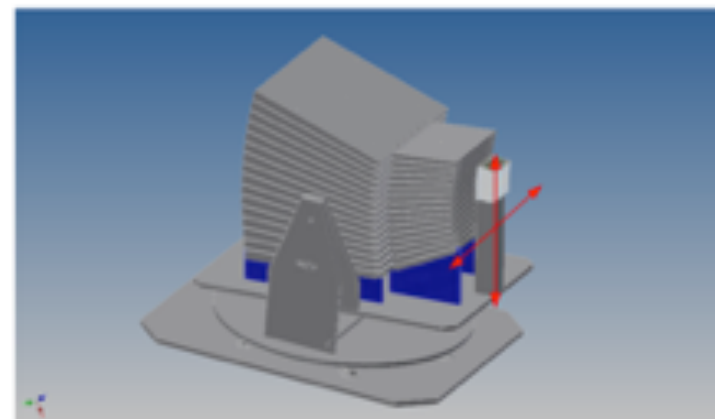
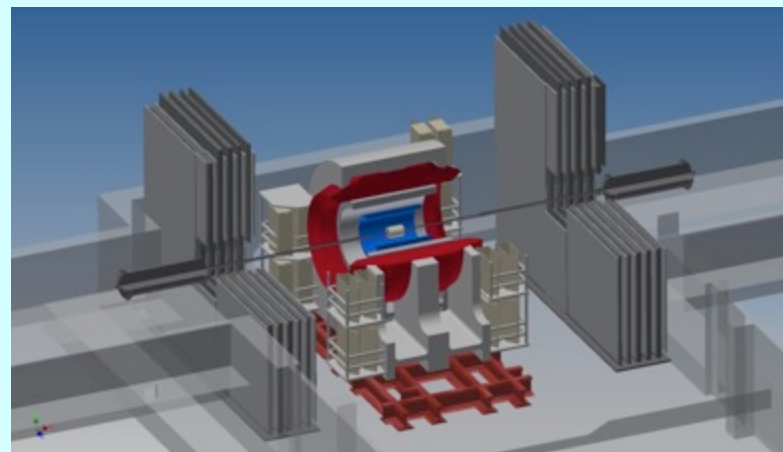
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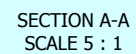


Hcal prototype component procurement is underway:

Steel and scintillator procurements in progress

8/1/2013







Lift Table moved to PHYSICS HiBay.

BABAR Magnet acquisition approved.

J. Haggerty & D. Lynch met with P Wanderer & M. Anerella to discuss shipping and delivery of magnet to Mag. Div., etc.

sPHENIX Prototype Assembly and Test Tasks

Design Hcal and EMCal Prototypes and support components and shipping crates - **in progress**

Procure materials and detail parts - **in progress**

Receive and inspect parts

Assemble prototypes

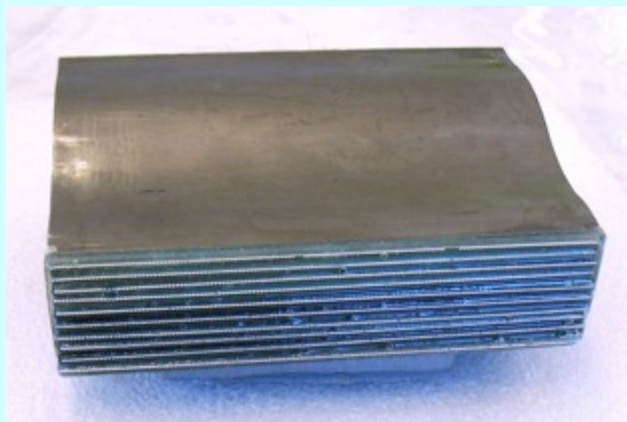
Test assemblies for mechanical fit and function

Package and ship prototypes to FERMI Lab for performance tests

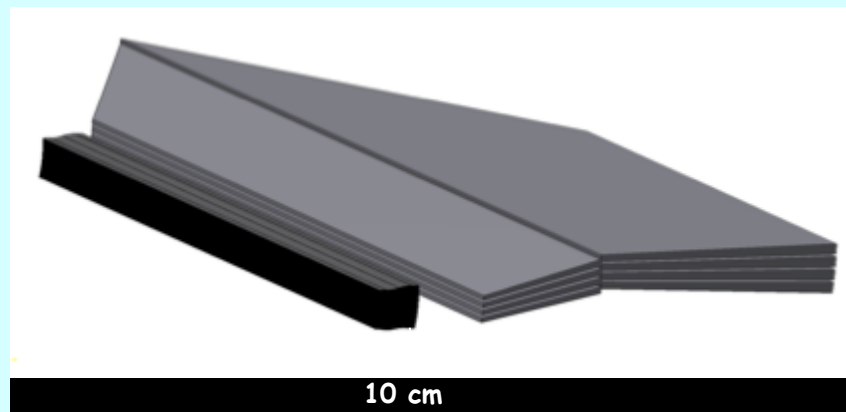
Test and Evaluate at Fermi Lab

EMCal Prototype

Prototype accordion plates with fibers produced as part of SBIR. EMCal for test beam will be flat tapered plates



Prototype "Egg Carton" light collection

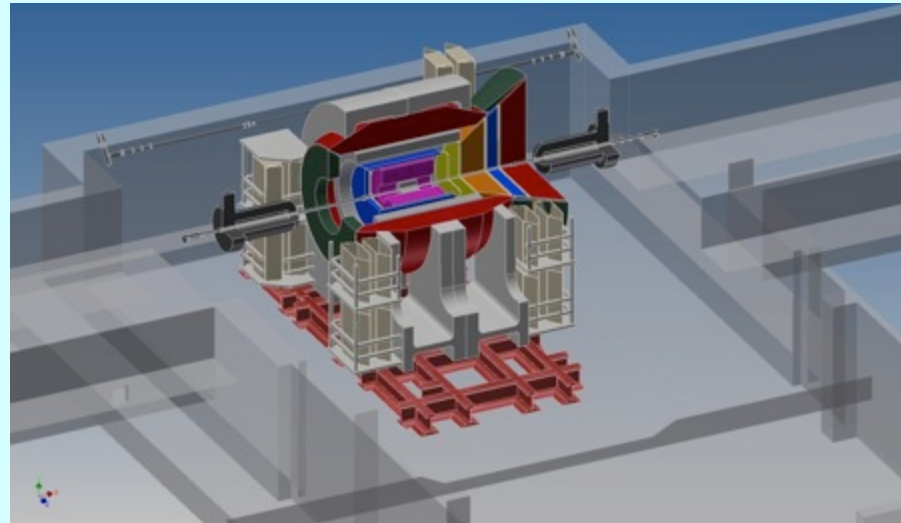
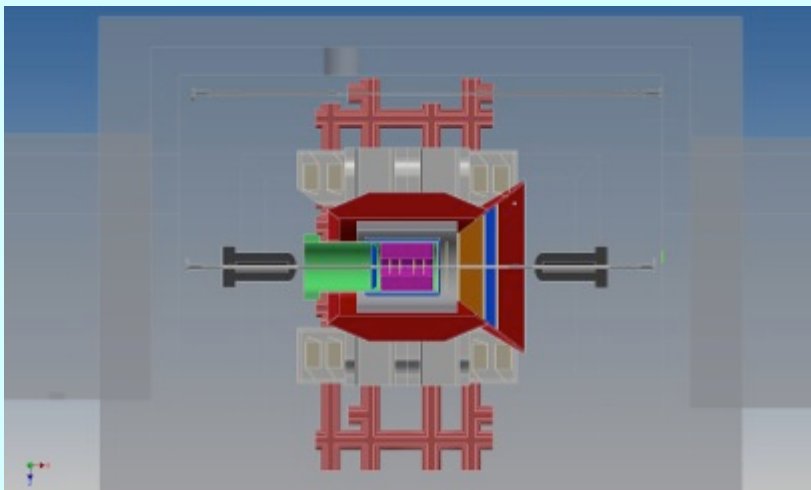


Proto-type EMCal in front of proto-type HCal

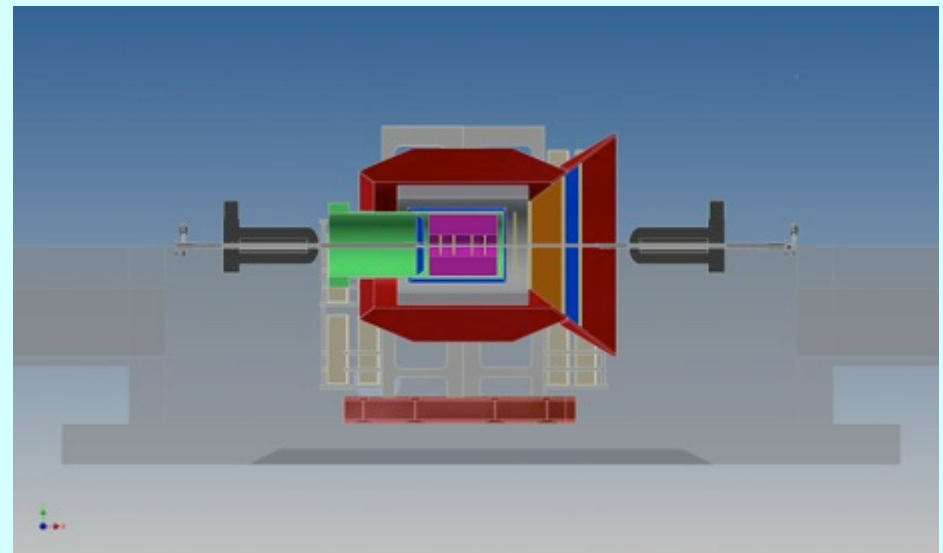
(Photos from Eric slides, from Craig and Sean slides)

ePHENIX

Plan View

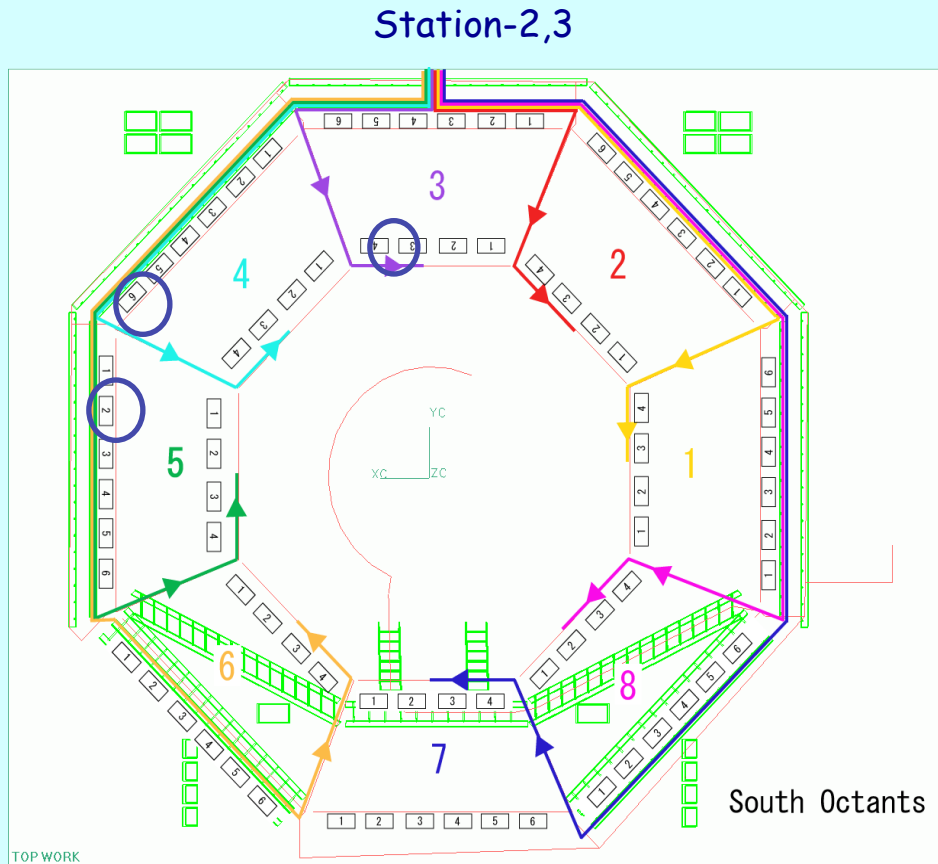


Elevation View

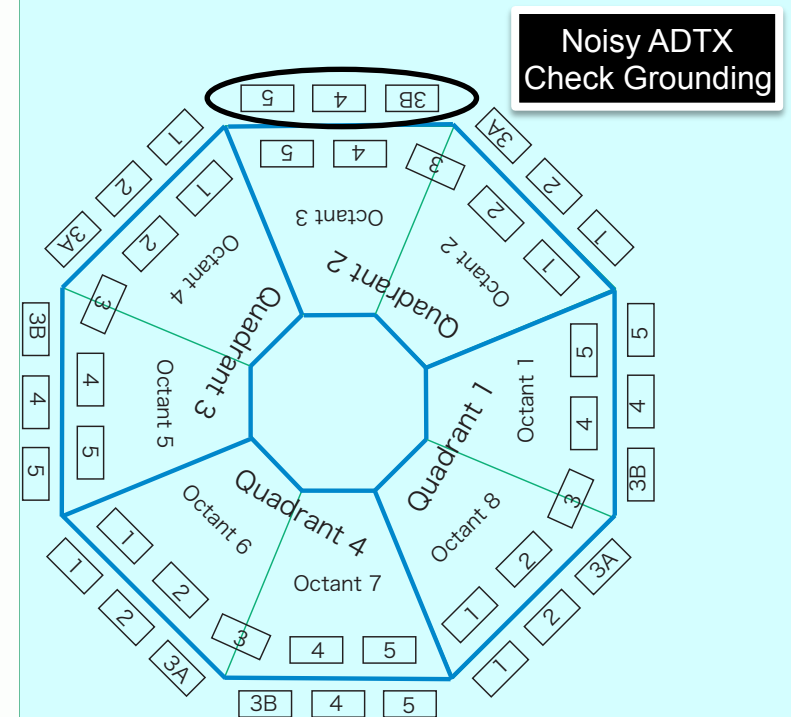


MuTr South Arm Areas to be accessed

PHENIX SOUTH ARM



South Station-1 Chassis

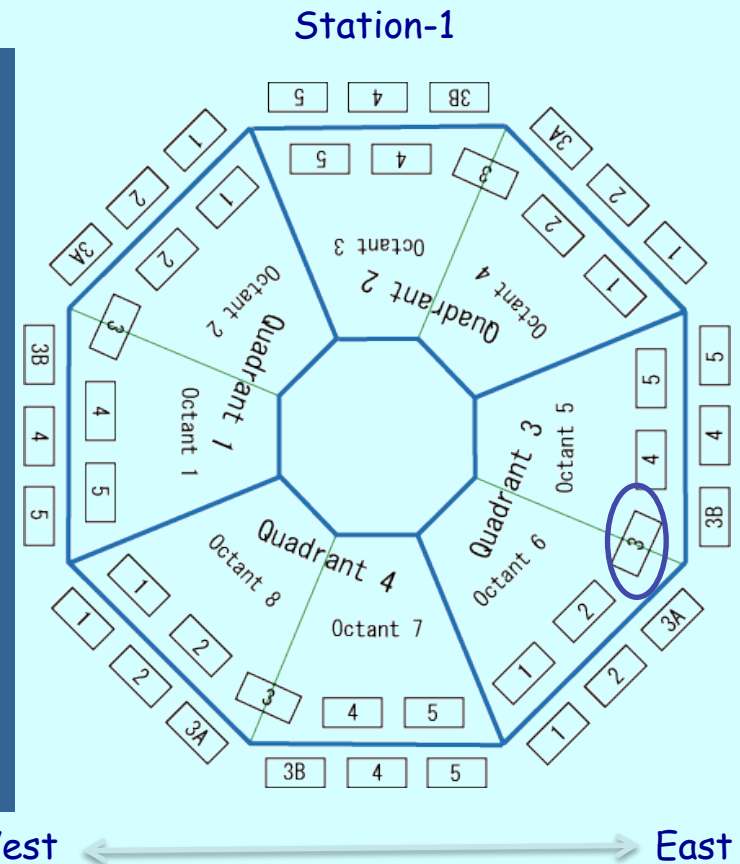
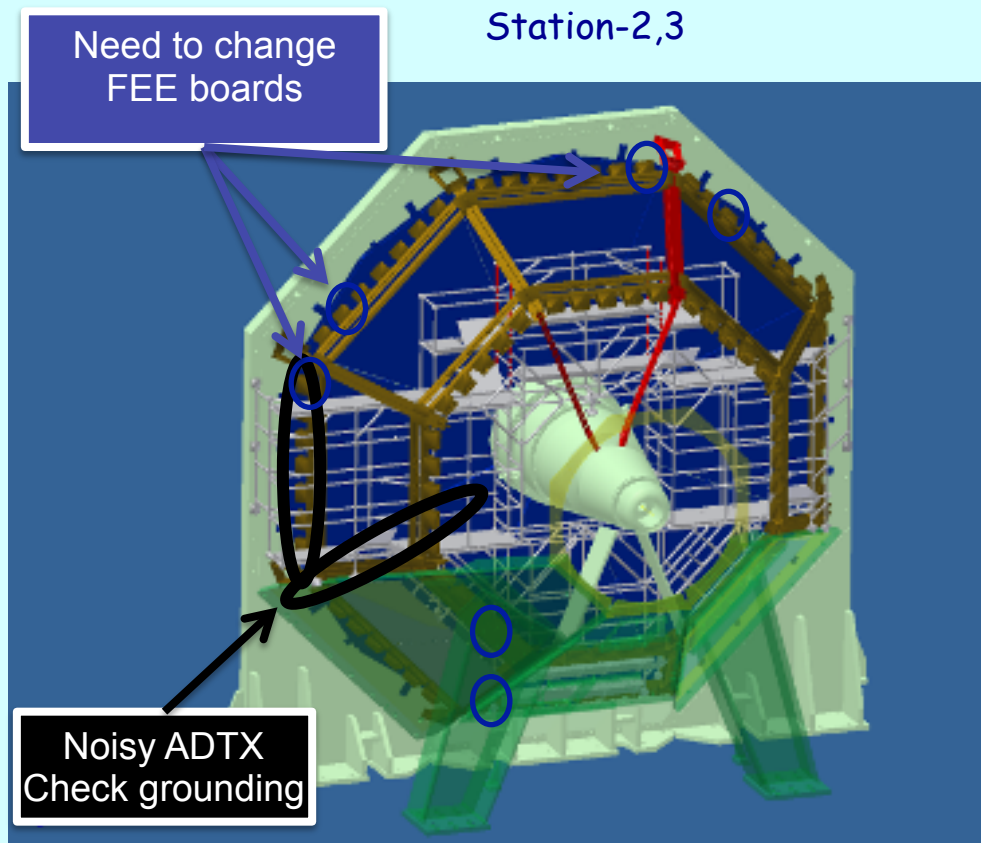


Itaru and MuTr expert crew to arrive next week

8/1/2013

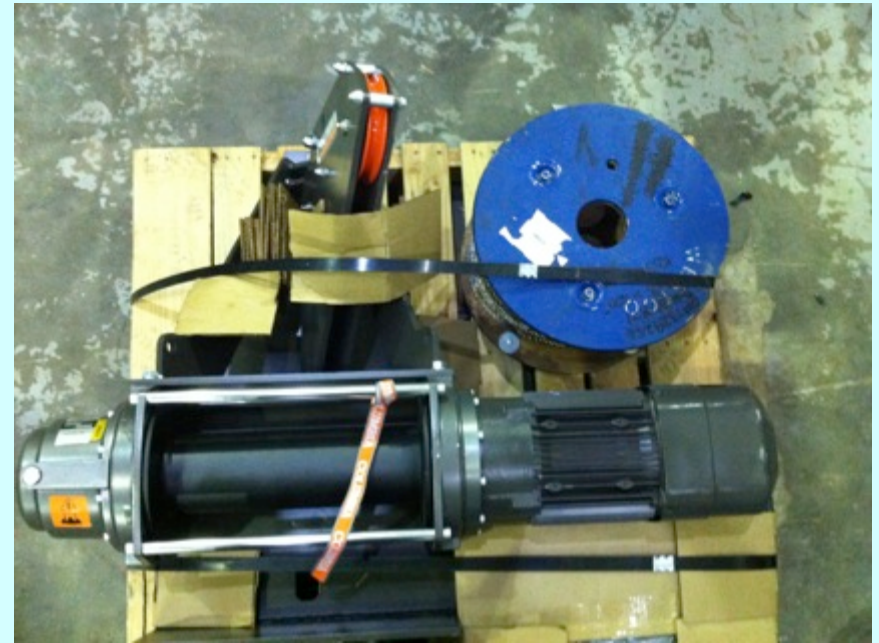
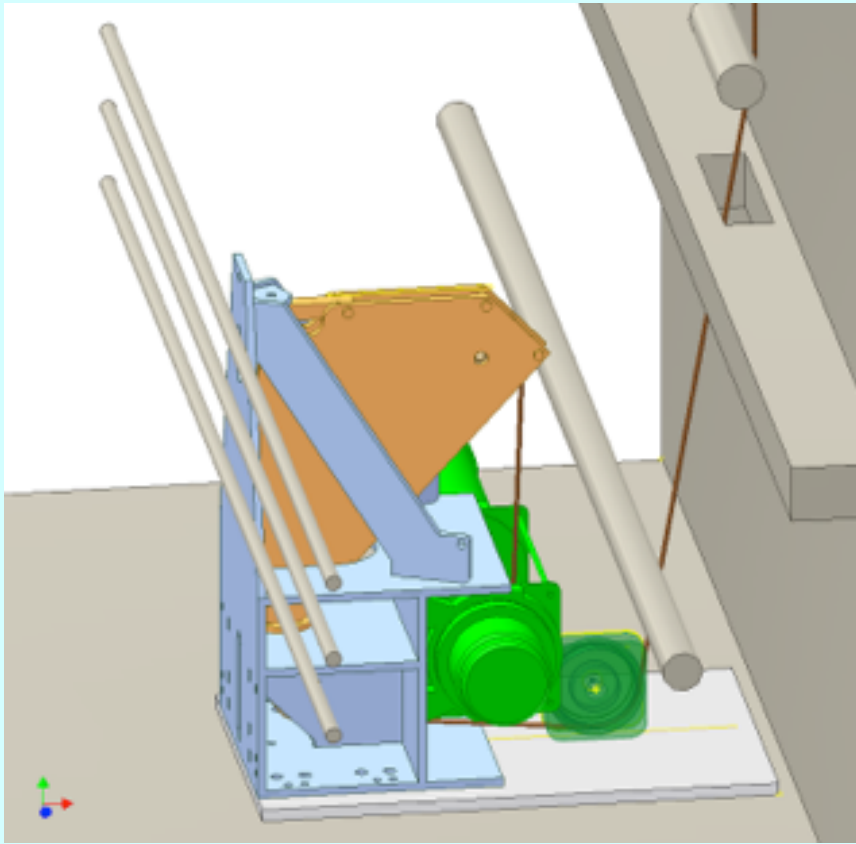
MuTr North Arm Areas to be accessed

PHENIX NORTH ARM



This area will not be accessed during 2013 shutdown.

Window Washer Winch Upgrade



Winch Received, coordinating inspection with John Hynan

8/1/2013

Window Washer Winch Upgrade Summary of Tasks

Specify and Order Winch & Sheave - Done

Work Permit - Done

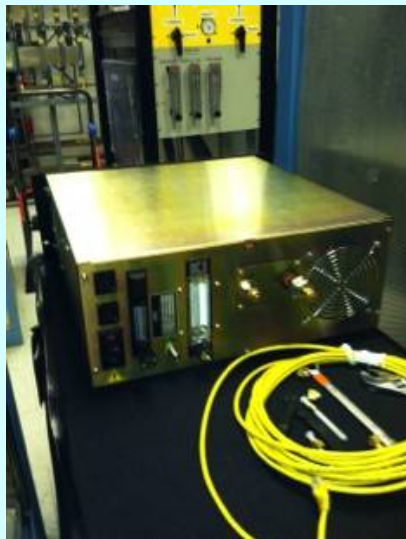
Receive and Inspect winch and components - **Received**

Design and Fabricate Winch & Sheave Base

Install and test Winch, integrate with window washer hardware, controls and power

Final Inspection and approval of window washer upgrade

(Note: remote safety pin insertion and retraction was installed and has been in operation since the start of run 13.)



New Gas Analyzer Project (RPC recirculation and more)



8/1/2013

Alcohol Chiller Work For Shutdown 2013



Merlin Chiller

➤ Chiller supplied about ½ the flow as in the past.

- Pressure on chiller says ~70-80psi
- Install gauge on supply line and measure actual output pressure.
- Replace chiller with spare if needed.
- Send old chiller out for maintenance or replace.

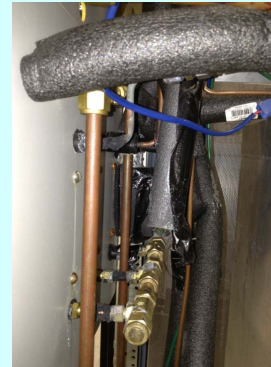
Re-Insulate Glycol lines



❖ Remove old polyethylene insulation and wrap and replace with foam rubber insulation.

- Temp of fluid is affected too much by temp change in the gas house.
- Lines are condensing and dripping because of gaps in insulation.

Locate and fix Glycol Leak.



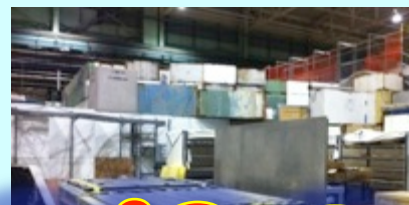
- Replace all three flow meters (compatible with Propylene Glycol)
 - switch to Visi-Float (VFA) for better compatibility
- Redo connections (replace fittings) behind flow meters
 - Re-insulate all cold lines with foam rubber insulation.

Additional Shutdown Work

- ZDC Remove, Test, Recalibrate



- RPC Factory Decommissioning



Done

PHENIX Student Internship Opportunity

Raynold K. Lewis

8/1/2013



Internship Goals

Update and improve essential elements of the PHENIX gas supply and distribution configuration management documentation.



Achievements

- Creating 3D models of the mixing house, new ethane tube trailer, and gas sheds using Autodesk Inventor.
- Creating a 3D model for the mixing house interior.
- Updating 2D schematics of the gas pad, mixing house, and freon gas shed using AutoCAD.
- Updating gas system EXCEL documents.



Purpose

Upgrades & Renovations

The updated documentation helps:

- Demonstrate how the gas subsystems are arranged presently.
- Increase awareness of newly upgraded and/or missing components including valves, vaporizers, gas cylinders, pressure regulators etc.
- Identifying efficient space for future components to be added to the gas substystems.

Updated Gas Pad 2D Schematics

Argon Dewar

CR-07008 - 900 Gallon, 250
psi, Vert, MVE, 1988, NB#
16489, Serial# 946

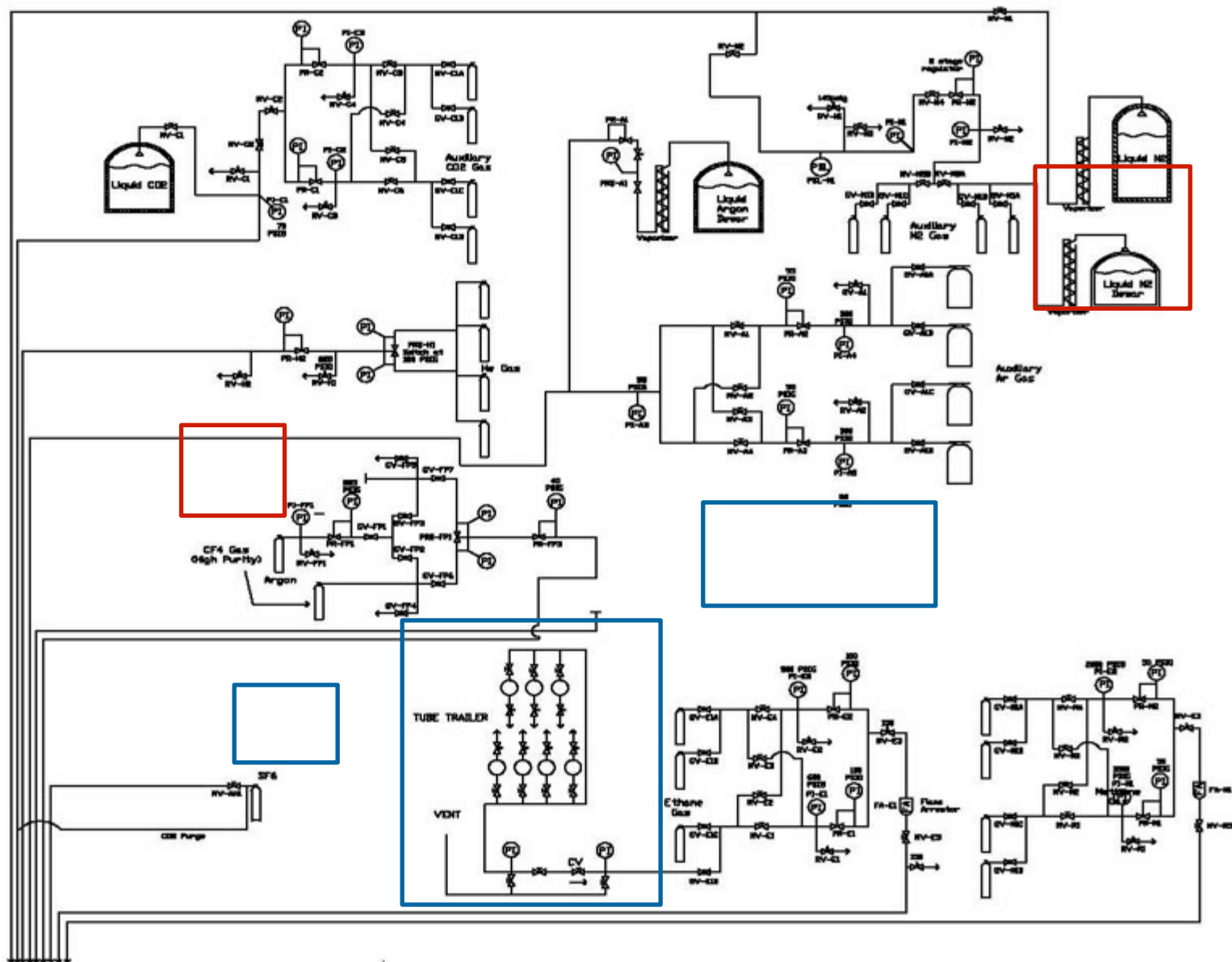
Final Line Assembly

75 psi delivery
FBC7000GB2

Vaporizer

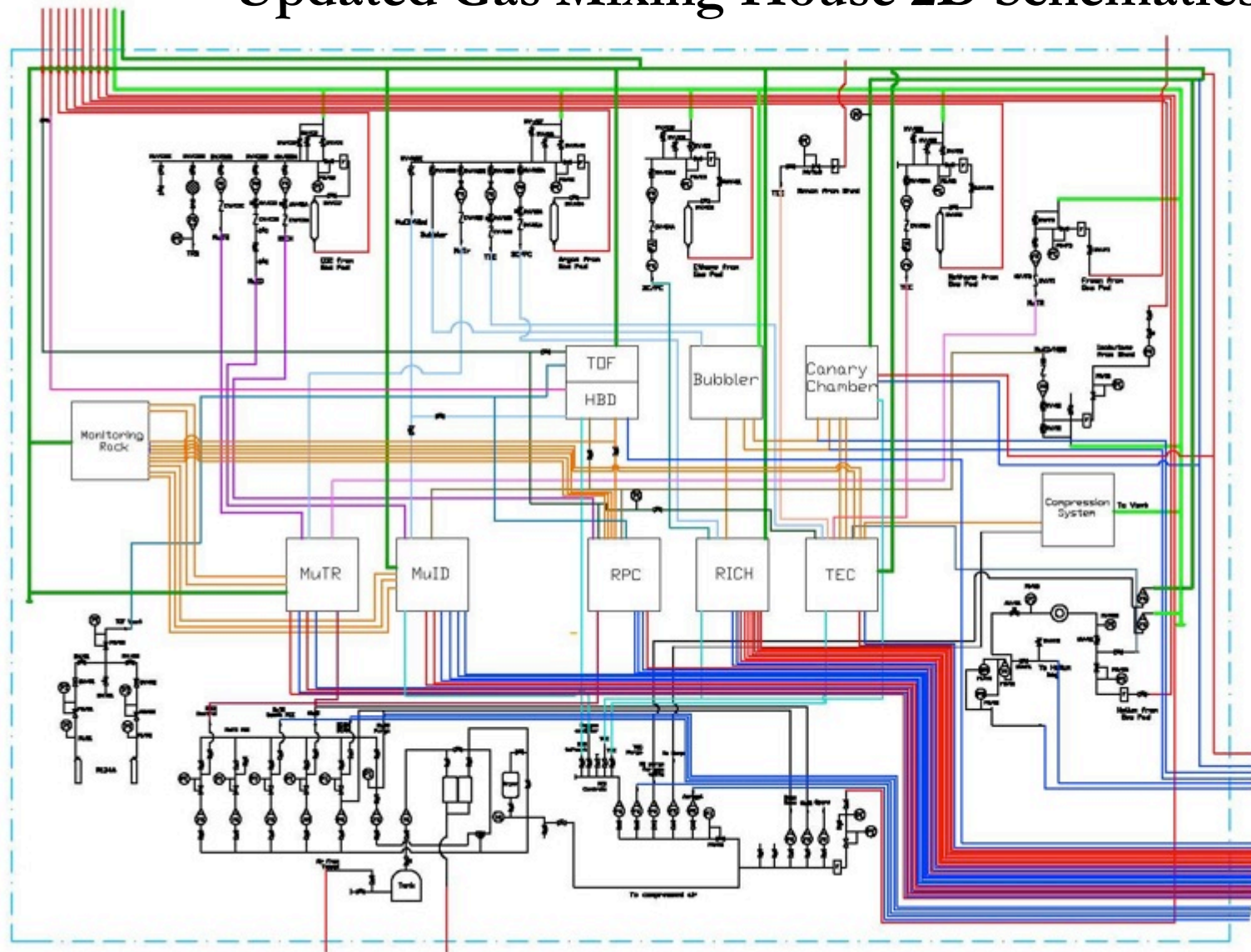
AL5000HF-450
5Kw with Mueller Flange

Symbol	Name	Label
DV	Slide Valve	SV-01
PS	Slide Valve	SV-02
PS	Manual Valve	SV-03
PS	3-Way Valve	SV-04
PI	Pressure Indicator	PI-01
PS	Pressure Switch Low	PSL-01
PI	Pressure Indicator	PI-02
PS	Pressure Switch High	PSH-01
FA	Flame Arrestor	FA-01



Gas Pad Drawing No.

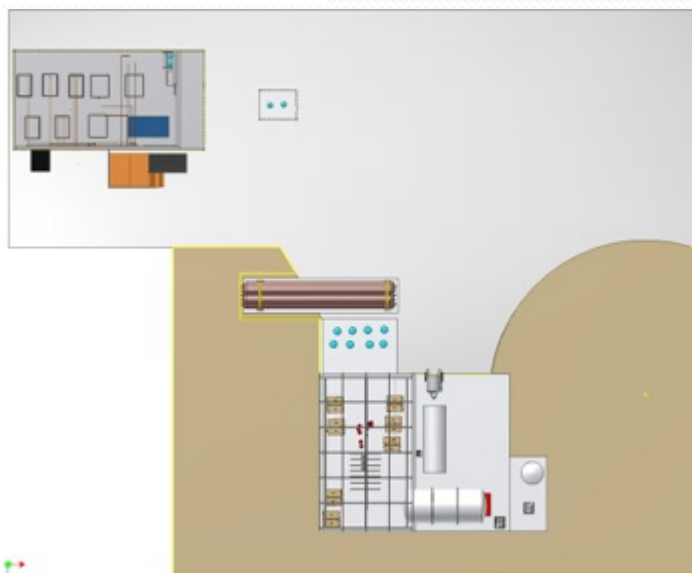
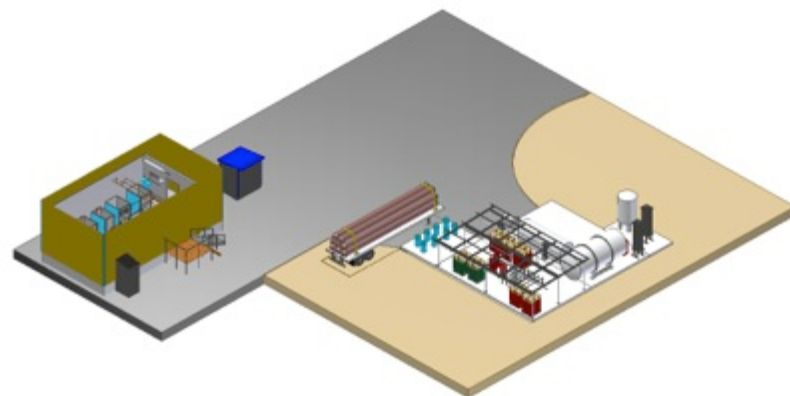
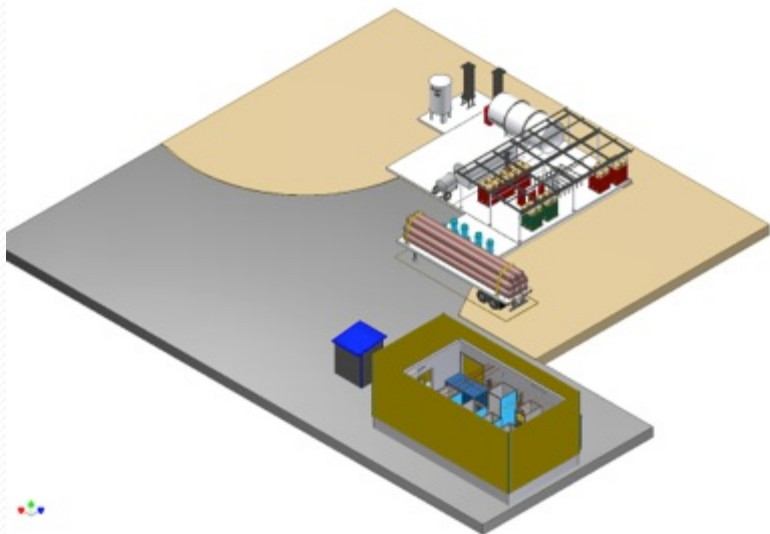
Updated Gas Mixing House 2D Schematics



Symbol	Name	Label
	Globe Valve	GV-00
	Ball Valve	BV-00
	Manual Valve	MV-00
	Solenoid Valve	
	3-Way Valve	3WV-00
	Pressure Indicator	PI-00
	Filter	
	Pressure Regulator	PR-00
	Flow Meter	
	Flame Arrestor	FA-00
	Check Valve	CV-00
	Humidity Indicator	
	Differential Pressure Indicator	
	Pressure Switch	

Line	Name
	Supply Line
	Return Line
	Gas Line
	Vent Line
	CO2
	Argon
	Xenon
	Nitrogen
	Ethane
	Freon
	High Purity
	Helium
	SP4
	Nitrogen
	Unpurified
	Isobutane
	SCM4
	Alcohol Gas
	Acetylene

IR Experimental Area



2013 Shutdown Schedule

PHENIX
SHUTDOWN

Prep for 2013 shutdown	Done
Design, Fabricate MPC-Ex	
Define tasks and goals	
Analysis and design of fixtures, tools and procedures	
Fabricate/procure tools and fixtures	
Tests, mockups, prototypes	
Receive, fabricate, modify, finish installables	
Review and approval of parts, tools, fixtures and procedures	
Assembly and QA tests	
VTX Strippixel redesign	Done
VTX Strippixel 1 st article stave assembly	Done
VTX Strippixel 1 st article qualification/performance tests	Done
VTX strippixel stave production	5/20-9/20/2013
VTX Strippixel sensor reclamation	4/1-8/20/2013
VTX Strippixel ladder assembly & Test	7/15-9/27/2013
Pixel Ladder repairs	4/1-9/20/2013
Run 12 Ends	Done
Shutdown Standard Tasks	Done
• Open wall, disassemble wall, Remove MuID Collars	
• Move EC to AH, etc.	
VTX/FVTX Post run tests	Done
Disassemble VTX/FVTX services	Done
July 4 th Holiday	Done
Remove VTX/FVTX and transport to Chemistry Lab	Done
Remove Lampshade MMS, East Vertical	Done
Assemble, Test and Install MPC-Ex (Partial, location TBD)	7/22-10/1/2013

TECHNICAL SUPPORT WORKS

MuTR Troubleshooting, maintenance and repairs	7/22-9/27/2013
Summer Sunday (8/4) Prep and teardown	7/29-8/6/2013
Summer Sunday (RHIC)	8/4/2013
DC East Window Upgrade and Related Repairs	8/10-9/27/2013
sPHENIX HCal Prototype Assembly/test	8/19-10/15/2013
Labor Day Holiday	9/2/2013
Re-assemble VTX/FVTX halves	8/19-10/14/2013
Test, survey (at Chemistry and IR) and re-install VTX/FVTX	10/14-10/21/2013
Install & Survey VTX/FVTX in 1008 IR	10/21-11/18/2013
VTX Commissioning	11/18-12/9/2013
Other detector maintenance as required	As required
Infrastructure maintenance as required	As required
TBD prototype tasks	As required
Pre-run commissioning and prep for run 14	11/1-12/31/2012
Veterans Day, Lab Holiday	11/11/2013
Prep for EC roll in	11/1-11/9/2013
Roll in EC	11/10-11/12/2013
Prep IR for run	11/1-11/30/2013
Thanksgiving Holidays	11/28-29/2013
Pink/Blue/White sheets	12/14-12/31/2013
Christmas Holiday	12/24-25/2013
New Year's Day Holiday	1/1/2014
Start run 14	1/2/2014

From Ray Karol:

IMPORTANT: DOE Fire Protection Program Review:

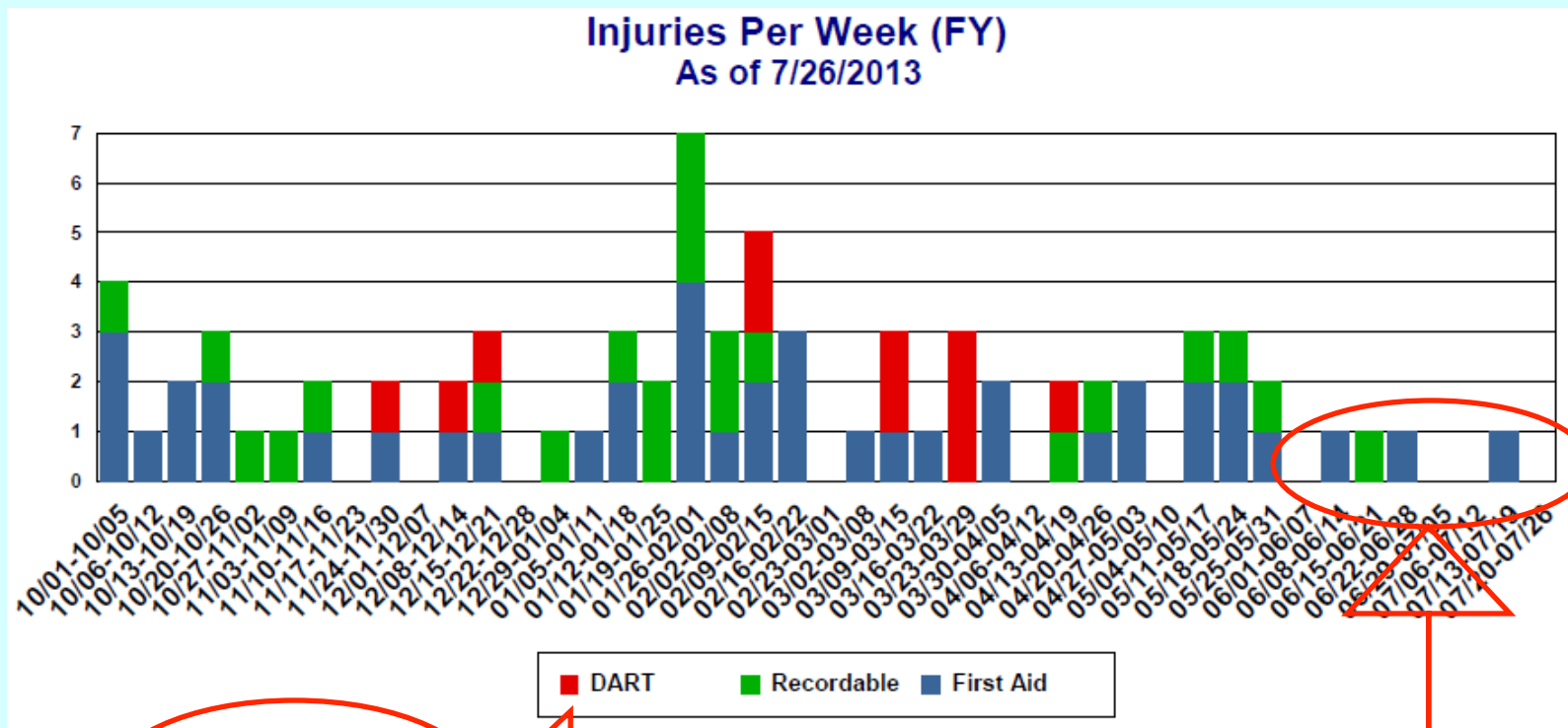
DOE will be onsite to conduct their triennial review of the Fire Protection Program during the **weeks of July 29 and August 5. (This week and next week)**

During this time, as a part of their assessment, they will be surveying a sampling of buildings to assess the condition of fire protection and life safety systems.

In preparation for the visit Managers, Group Leaders, Technical Supervisors, Research Space Managers and all staff must all review our spaces to make sure that all:

- Egress paths are free and clear of obstacles (such as furniture, carts and cylinders not in use)
- Fire doors are not chocked in an open position to prevent them from closing
- Fire loading is minimized by removing combustible materials from all areas. (for example cardboard, waste paper, etc.)
- Gas cylinders are properly segregated by type (for example oxidizers, toxics, flammables)
- Fire extinguishers are unobstructed
- Flammable liquids not in use are stored in flammable cabinets.
- Hazardous materials are properly represented in placards
- Butt stops are cleared of combustible material (such as leaves or pine needles)





Injury Status:

FY13 YTD: DART – 11, TRC – 33, First Aid – 41
 FY12: DART – 17, TRC – 35, First Aid – 70
 FY11: DART – 30, TRC – 44, First Aid – 45

FY13 Injury Listing: <https://intranet.bnl.gov/esh/shsd/seg/OccInj/BNLInjuries.aspx>

No new recordable injuries 5 weeks in a row !
 No new DARTS since April !

Recent Events		
7/25/13	Non-Reportable	An employee inadvertently drove his car up onto a curb on Rutherford Ave. His car suffered some minor damage. He was taken to St. Charles Hospital for evaluation, although he reported suffering no injury. No other personnel were involved, and there was no damage to BNL property. (Event Link)
7/23/13	SC-BNL	Whole sections of the roof of Bldg. 555 were exposed to torrential rain from Tuesday evening until Wednesday (7/23-7/24/13) and leaked, flooding networking closets from the top floor all the way to the basement, shorting out and destroying ~\$50,000 worth of networking equipment. Operationally this brought down both telephone service and the computer data network to large portions of Bldg. 555, both of which took a day to restore completely using temporary backup equipment. Contractors are in the process of replacing the roof. (Event Link)

Where To Find PHENIX Engineering Info

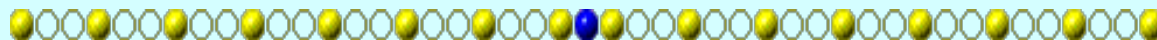


July is history, August is here, and
I am off for the next 2 weeks !



http://www.phenix.bnl.gov/WWW/INTEGRATION/ME&Integration/DRL_SSint-page.htm

8/1/2013



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